



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

July 13, 1994

REPLY TO THE ATTENTION OF:

HSRL-6J

Mr. Thomas Hilbert
Winnebago Reclamation Service Landfill
8403 Lindenwood Road
Rockford, Illinois 61109

Re: Winnebago Reclamation Landfill, Pumping Test Plan and
Landfill Management Design Work Plan

Dear Mr. Hilbert:

Enclosed are the comments of PRC Environmental Management, Inc. and my comments on the "Pumping Test Plan" (June 1994). I have not received any comments from the State. In general, the document is satisfactory, but there are some points raised by the comments that must be clarified. Since I believe that it should not be too difficult to address the comments and finalize the document, I am conditionally approving the plan so that you may proceed with the work.

One item that I have thought a little more about is the analyses of water samples. You might consider also analyzing extraction well samples during the test for chloride. Since chloride serves as an indicator, any significant changes that might occur during the test might be very informative.

Neither PRC nor I have any comments on the "Landfill Management, Closure and Monitoring Remedial Design Work Plan" (May 1994). I have not received any comments from the State. Therefore, this document is approved.

If you have any questions, please call me (312-886-4746).

Sincerely yours,

Bernard J. Schorle
Remedial Project Manager

Enclosures

cc: Martin J. Hamper, Warzyn Inc.
Fred W. Nika, Jr., Illinois Environmental Protection Agency
Luda Voskov, PRC Environmental Management, Inc.



**Winnebago Reclamation Landfill (Pagel's Pit)
Pumping Test Plan
June 1994**

Comments, BJS--USEPA, July 11, 1994

1. Page 1, first of second set of bullets. Of course, more than the VOCs (volatile organic compounds) are of interest along the west boundary. This implies otherwise.
2. Page 4, end of Section 2.1. Another thing that might affect these assumptions is the presence of the creek.
3. Page 5, top. With regard to the depth of the test well, first this says that the actual screen interval will be chosen after a test boring is drilled "to obtain specific geologic conditions at the extraction well location". (I am assuming that screen interval refers to the elevation rather than screen length.) Then it states that the test borehole will be taken to the proposed depth of the extraction well. This proposed depth should have been stated.
The geologic conditions that are to be evaluated in determining the screen interval elevation should have been mentioned unless these are the items discussed here for the determination of the screen length.
4. Section 2.2. This mentions a well yield of 30 to 50 gpm. In the ROD it was indicated that the flow would be in the 20 gpm range. If the yield is as high as 50 gpm, I trust that that is not too high.
5. Section 2.2. There is no mention of the material for the well screen and casing for the extraction well. What material is to be used?
6. Section 2.4. This states that wells G116 and G116A will serve as background wells. There is no problem because these wells are on the other side of the creek?
7. Section 2.4. I assume the temporary piezometers are the two T wells (which are listed as monitoring wells on Figure B4). On the figure well T1 is shown 25 feet from wells MW106/P1, not midway between these wells and the creek.
8. Section 2.5. This states that a log for the trucker hauling water from the temporary holding tank is in Appendix C. I have no Appendix C. How is the volume to be measured and what accuracy is expected?
9. Section 2.6. How long will each of the steps last? Will the well be shut down for some period of time between the step test and the constant rate test?

10. Section 2.6. During the constant rate test, will an attempt be made to keep a constant rate or will the controls be set and then not adjusted if the rate changes? The range of 25 to 35 gpm is listed. Might the rate vary this much or is it that the rate has not yet been selected but will be in this range?

11. Section 2.6. Is there more that might be considered when deciding whether or not to extend the constant rate test beyond 24 hours than whether the drawdown has apparently reached steady state?

12. Section 2.7. What is the "background monitoring period"?

13. Section 2.7. The times listed for sampling, are these from the start of the constant rate test or from the start of the step test?

14. Page 8. I am surprised that arsenic is not one of the substances being tested for. This substance has been present in this area and it might be a problem for the treatment system, depending upon the level expected to have to be met.

I am also surprised that chloride is not being tested for. This has frequently been used as an indicator. It too could be a problem for the treatment system, depending on what will be allowed under NPDES permit requirements.

15. Section 2.7. I assume that the samples to be obtained before and after the test will be obtained in the usual manner so that there will be a minimum effect on the level of VOCs and dissolved oxygen. The VOCs in the extraction well discharge might be affected by the pump being used in the test. However, normal samples should be obtained in sampling before and after the pumping tests.

16. Between Section 2.3 and Appendix A, I did not find the criteria for determining when development is finished. What is the criteria?

17. Appendix B. This does answer some of the questions raised above concerning the times around the step test and the constant rate test. I assume these are to be used. Note that this says that the step test should be completed at least 24 hours prior to the planned start of the constant rate test. Since the step test will take approximately a working day to complete, the constant rate test would not be able to start until near the end of the next working day.

On page 5, the step test is listed as optional. I assume that this is not correct.

Where in the well will the pump be set for the two tests? I assume it will be set near the bottom of the screen.

On page 5 it says that the first step is at about 1/3 of the well's estimated maximum. It goes on to say that the pumping test should be at the highest rate possible that will not dewater

the well. In Section 2.6 the rates for the step test are "approximately one-third, two-thirds, and equal to that of the constant rate pumping test". It was my understanding when reading the main text that the constant rate test was not necessarily to be done at the maximum rate for the well.

Will bucket measurements be used at the anticipated flow rate in order to check the flow meters (see page 6)?

On page 6 it says that minor pumping rate adjustments are to be made to maintain a constant pumping rate, so this partially answers one of the questions above.

Page 6 mentions forms attached to "this document". There were no forms in Appendix B.

18. Because of what I have been told verbally (that efforts will be made to speed up the schedule), I have not commented on schedule related items.

Bernard J. Schorle
July 11, 1994

**TECHNICAL REVIEW COMMENTS ON "PUMPING TEST PLAN"
WINNEBAGO RECLAMATION LANDFILL, ROCKFORD, ILLINOIS**

PRC Environmental Management, Inc. (PRC), reviewed the above-referenced plan for consistency with the groundwater remedial design (RD) work plan dated September 1993; with the results from groundwater sampling data submitted on June 17, 1994; and with technical standards for aquifer testing.

PRC believes that the Pumping Test Plan (Plan), in general, is well presented and adequate. However, a few issues need to be clarified and corrected before the document is finalized. These issues are discussed below.

GENERAL COMMENTS

1. The Plan is based on a detailed standard operating procedure (SOP) for pumping test performance. Hence, the following site-specific procedures are omitted from the Plan and should therefore be added:
 - a. Measurement intervals for observation wells and piezometers
 - b. Water level measurement procedure for piezometers
 - c. Method of data analysis for step-drawdown and constant rate tests

Also, references that identify the data analysis sources should be added to the Plan.

2. PRC believes that in order to monitor any effects of the Killbuck Creek as a boundary to the pumping test, the nearest staff gauge should be included in the monitoring network. Staff gauge SG-1 is located about 100 feet from the pumping well. The groundwater RD work plan states that Killbuck Creek is a potential hydraulic boundary to shallow groundwater flow. Based on the conceptual model description presented in the Plan, Killbuck Creek may act as a source of groundwater recharge. The discussion regarding groundwater monitoring at Killbuck Creek should be included in the Plan.

SPECIFIC COMMENTS

1. **Page 6, Section 2.4, Observation Well Locations.** The text states that two temporary water-level piezometers will be installed. However, the depth of the piezometers and other construction details were not included in this document. The text of the Plan should be revised to include the depth of the piezometers and construction details.
2. **Page 7, Section 2.8, Paragraph 2.** This paragraph states that the recovery measurements will be performed in the seven monitoring wells that are closest to the pumping wells. PRC believes that two temporary piezometers should also be included in the monitoring program and the text should be revised accordingly.
3. **Figure B4.** Staff gauge locations are not shown in Figure B4. However, in the groundwater RD work plan (Figure B2), three existing staff gauge locations are shown. As was previously discussed in the General Comments section, the nearest staff gauge needs to be included in the monitoring network and should therefore be shown in Figure B4.

In the "legend" and "notes" sections, the T₁ and T₂ locations are defined as proposed wells. However, on page 6 of Section 2.4, they are described as "temporary water level piezometers." This discrepancy in the well description should be clarified.

Four new monitoring wells (G132, G133, G134, and G135) are shown in the figure. However, the rationale for the placement of these wells has never been presented. The text should be revised to include the placement of these wells.